

FERTILE GROUND:

Growing the
Competitiveness of
Ontario's Agri-food Sector



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chamber of
commerce

ABOUT THE ONTARIO CHAMBER OF COMMERCE

For more than a century, the Ontario Chamber of Commerce (OCC) has been the independent, non-partisan voice of Ontario business. Our mission is to support economic growth in Ontario by defending business priorities at Queen's Park on behalf of our network's diverse 60,000 members.

From innovative SMEs to established multi-national corporations and industry associations, the OCC is committed to working with our members to improve business competitiveness across all sectors. We represent local chambers of commerce and boards of trade in over 135 communities across Ontario, steering public policy conversations provincially and within local communities. Through our focused programs and services, we enable companies to grow at home and in export markets. The OCC provides exclusive support, networking opportunities, and access to innovative insight and analysis for our members. Through our export programs, we have approved over 1,300 applications, and companies have reported results of over \$250 million in export sales.

The OCC owes a debt of gratitude to the members of its Agribusiness Taskforce for contributing their expertise to this project. Please note that the opinions expressed in this report are not necessarily the opinions of individual members of the Taskforce.

The OCC is Ontario's business advocate.

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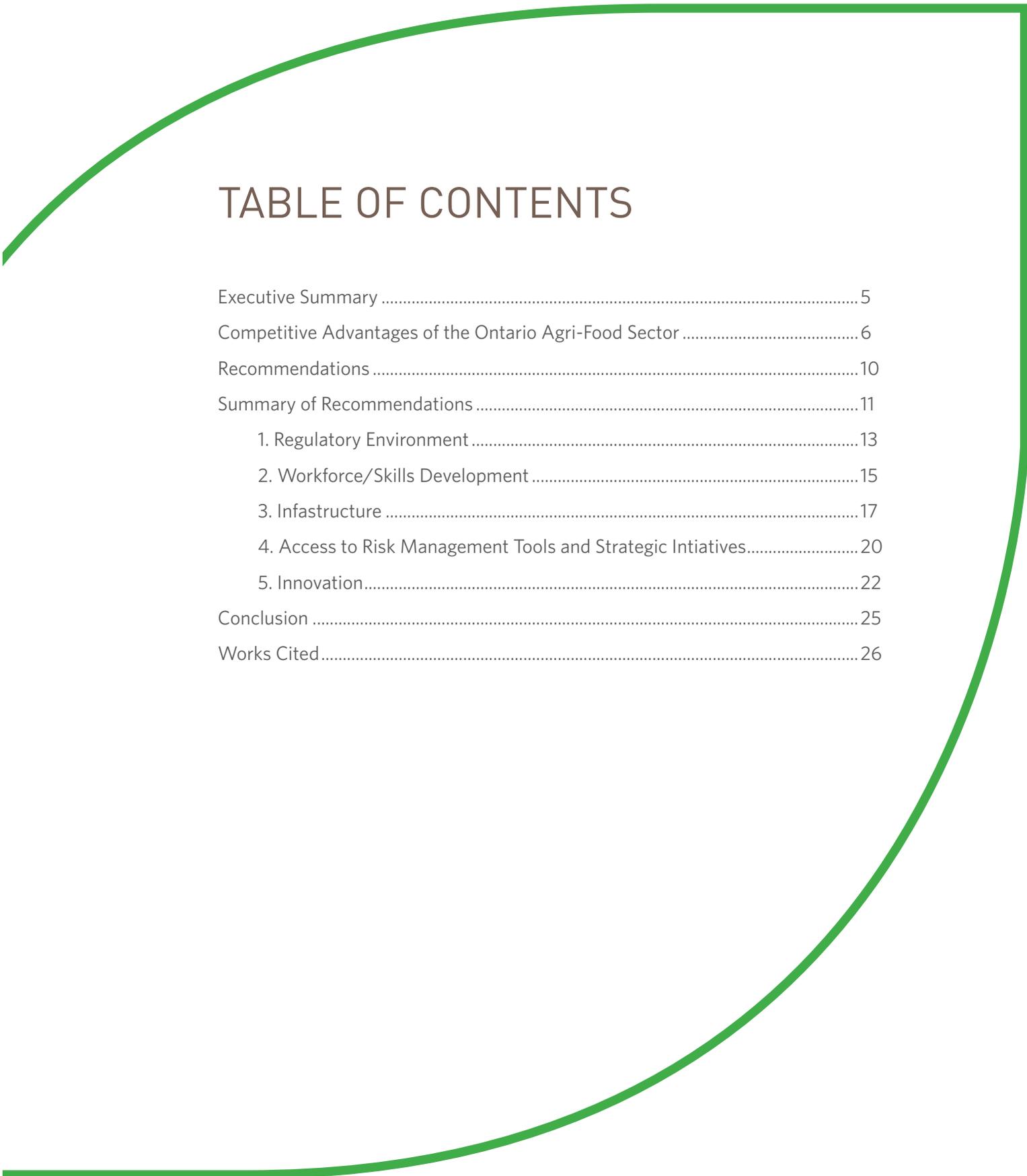


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EXECUTIVE SUMMARY

Ontario agribusinesses are innovative, internationally competitive, and adaptive to the challenges and opportunities associated with changing consumer demands. The sector is one of the most important economic drivers in the province and includes farm input and service supplier industries, farming, food and beverage processing, distribution, retail, wholesale, and foodservice industries.¹ From farm to table, all aspects of the agri-food sector are interconnected; farmers rely on food processors to develop top quality, value-added products and food processors rely on farmers to produce a robust domestic supply of products grown and raised in Ontario. An astounding 70% of Ontario's agricultural production is fed into Ontario's food processing industry.²

Together, these industries employ approximately 1 in 9 Ontarians and contributed \$36.4 billion in GDP to the provincial economy, representing 5.9% of total Ontario GDP in 2015. Ontario food and beverage manufacturing industries represent over 15 percent of the GDP contributed by manufacturing industries in the province.³ The majority of Canada's food processing industry is located in Ontario, accounting for 41 percent of Canada's GDP in food processing. Nationally, the food processing sector is the second largest manufacturing industry – with shipments valued at \$105.5 billion.⁴

That said, the province cannot afford to take the continued success of the agri-food sector for granted. Ontario agribusinesses are experiencing significant pressure to adapt to a series of recent government announcements, including the introduction of the cap and trade system⁵ and waste elimination legislation.⁶ Producers and processors are required to divert substantial resources to meet regulatory obligations – all of which contributes to the cost of doing business in Ontario.

In this report, we present a series of recommendations designed to address these challenges and support the continued strength, resilience and dynamism of businesses in this sector.

To sustain the competitiveness of the agriculture and food processing sector in Ontario, it is critical that government adopt an approach to regulatory management that is flexible and responsive to the economic context in which agribusinesses operate.

To attract, retain and grow businesses in the sector, governments should focus the next Agricultural Policy Framework on promoting the efficient and sustainable production of food products, developing the skills of its workforce, improving access to risk management tools and strategic initiatives, and incentivizing innovation in the sector.

The recommendations presented in this report were developed through extensive consultation with representatives of the agri-food sector, including producer and industry associations. The Ontario Chamber of Commerce is committed to working with government to enhance the competitiveness of this industry, which is of fundamental importance to our membership and our communities.

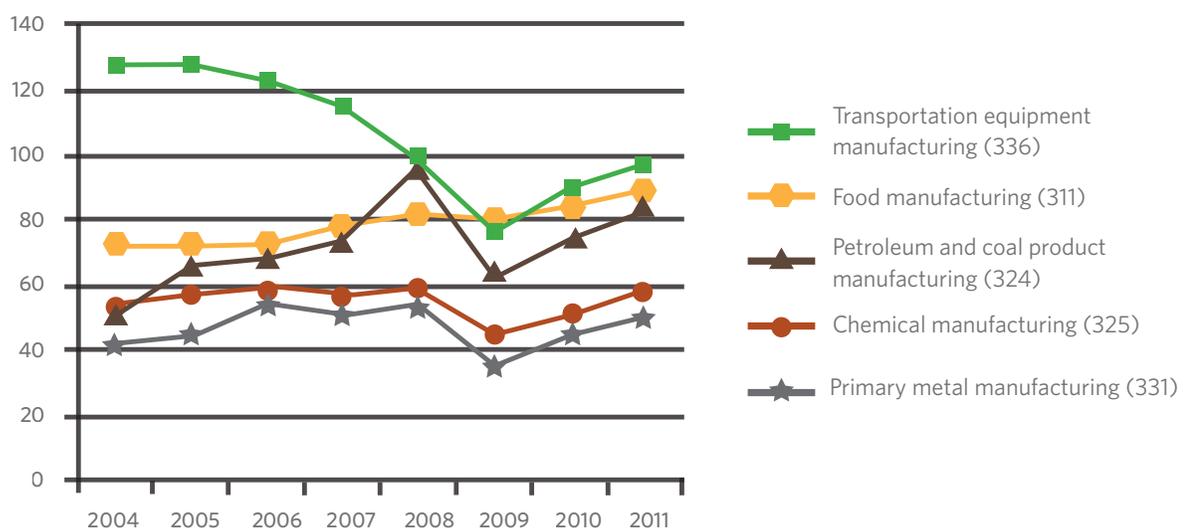
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COMPETITIVE ADVANTAGES OF THE ONTARIO AGRI-FOOD SECTOR

COMPETITIVE ADVANTAGES OF THE ONTARIO AGRI-FOOD SECTOR

Throughout its long history, the Ontario agri-food sector has demonstrated its resilience amidst changes in climate – both natural and political. Ontario farm businesses form the backbone of our robust food system to drive the Ontario economy forward. Using innovative farming practices, precision agriculture technologies and unique product diversification, our farmers produce over 200 commodities for domestic and global consumption. As demonstrated in Figure 1, among the top five manufacturing industries in Canada, the agri-food sector was the only one to generate revenue increases during the economic downturn of 2008.⁷ The food and beverage sector also ranks first in terms of providing jobs in the Canadian manufacturing sector, ahead of auto manufacturing.⁸ Multiple factors contribute to the strength of the Ontario agri-food sector. Throughout our consultations, the following four elements were identified as the most prominent foundations for our success.

Figure 1. Total Revenue in the Top 5 Canadian Manufacturing Sectors 2004-2011



Source: Statistics Canada CANSIM database from 2004 to 2011

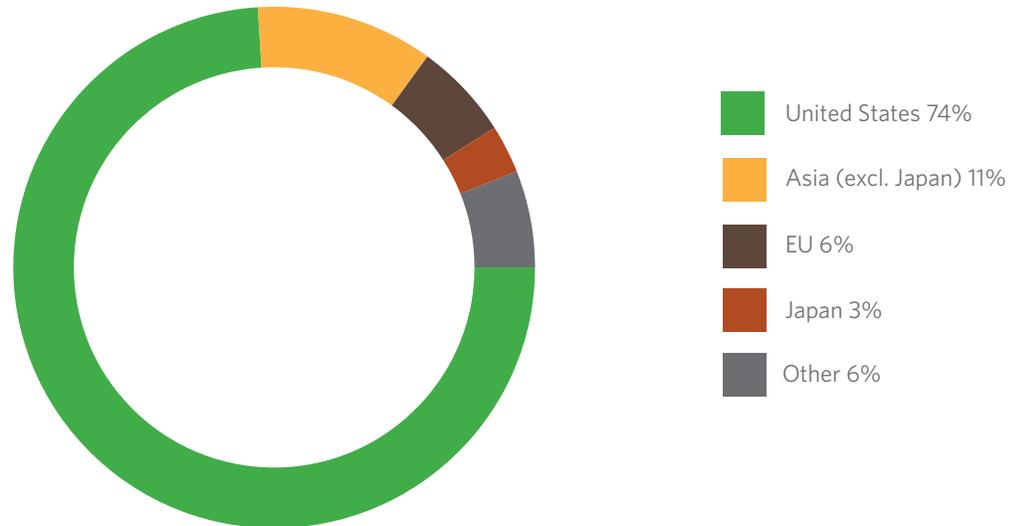
Brand recognition and traceability of product

Consumers want to be assured of the quality and safety of the food they consume. In response, retailers want to demonstrate the source of food products.⁹ Increasingly, the relative success of agri-food producers and processors is associated with their ability to track bio-product throughout the life-cycle – from farm to fork. Canadian foods have a global reputation in large part due to the comprehensiveness of the food inspections and standards upheld by the Canadian Food Inspection

Agency. Ontario agribusinesses are well positioned to leverage the value of ‘trust’ in Canadian food products abroad, particularly in emerging markets wherein consumers have little confidence in the safety of domestic product. A recent survey conducted by the China Food and Drug Administration (CFDA) revealed that 75 percent of Chinese consumers have no confidence in domestic food safety.¹⁰ Demand for high quality imported food products is expected to increase in China and other emerging markets as incomes and access to foreign products rise.¹¹



Figure 2. Ontario Agri-Food Trade by Region 2015



Source: Ontario Ministry of Agriculture, Food and Rural Affairs. 2016. *Ontario Agri-Food Trade by Region*,

Robust trading relationships

Canada is the world's fifth-largest exporter of agri-food product. In 2014, Canadian agri-food export sales totaled \$51.5 billion. Ontario agri-food exports were \$12.5 billion.¹² As demonstrated in Figure 2, the overwhelming majority - approximately 75 percent or \$10.46 billion - of Ontario agri-food export goes to the United States.¹³

Ontario's Going Global trade strategy helps companies expand their trade to new markets through the provision of services at every stage of the export process as well as the opportunity to participate in sector specific trade missions.¹⁴ Approximately 1,850 Ontario jobs are expected to be created through more than 100 agreements and MOUs that Premier Wynne and business delegates signed on recent Ontario trade missions to China and India. The estimated value of the agreements totals \$2.8 billion.¹⁵

Stewardship of natural resources

The provincial and federal governments are committed to advancing the sustainability of the agri-food sector. The most recent mandate of the Canadian Minister of Agriculture and Agri-Food, includes a commitment to support the Ministers of Natural Resources and Environment and Climate Change in directing investments to make Canadian resource sectors world leaders in the use and development of clean and sustainable processes.¹⁷ Similarly, ensuring the sustainability of agriculture is a key priority of the Ontario Ministry of Agriculture, Food and Rural Affairs.¹⁸ Recently, the provincial government announced a soil mapping initiative that will help farmers adjust their management practices and contribute to sustainable crop production in the province.¹⁹



These commitments are rooted in a long tradition of government and industry collaboration in the sector to tackle environmental challenges. Since 1993, over 35,000 farmers have participated in Canada-Ontario Environmental Farm Plan (EFP) workshops. Jointly administered by federal and provincial governments in partnership with the Ontario Farm Environmental Coalition, the EFP helps farmers to adopt more sustainable practices.²⁰ Producers are continually seeking out those practices that improve water use and the resiliency of plants to climatic stresses, in part to manage input costs but also with the goal of protecting Ontario's valuable natural resources.²¹

Food and beverage processors have also made significant investments in the development of sustainability tools and resources. Organizations such as Provision Coalition are further building responsible sourcing strategies by partnering with Ontario agricultural groups on the development of the Sustainable Food and Farm Plan. These type of programs and resources offer expertise and solutions for members of the agri-food community to access and implement sustainability solutions that will improve competitiveness and brand with consumers.

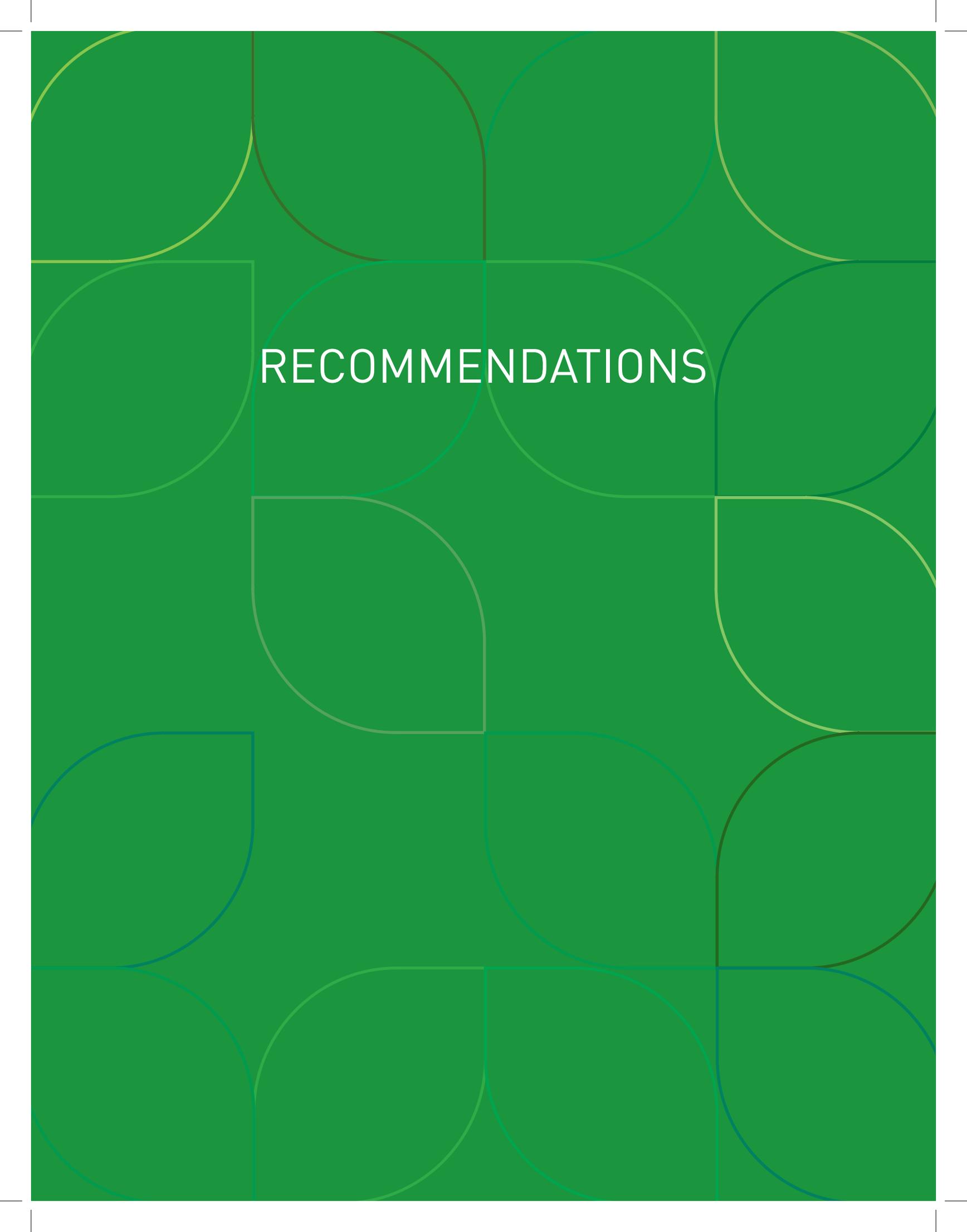
The importance of these efforts and the environmental leadership demonstrated by government and industry cannot be overstated, given that agricultural production is dependent on the quality of natural inputs – the most fundamental of which are soil, water, seed or livestock and climate.²²

World-leading practices and research

Long-standing partnerships among industry, academia and government have contributed to the establishment of Ontario as a globally renowned centre of excellence for research and commercialization in the agri-food sector. For example, the University of Guelph and the Ontario Ministry of Agriculture, Food, and Rural Affairs have worked together for over 125 years to develop research that has improved and transformed the agri-food industry. Made-in-Ontario research breakthroughs, such as Omega-3 enriched eggs, enhance the quality of our product and our reputation in global markets as a safe and innovative agri-food supplier.²³ In agri-food, like in many sectors, Ontario has consistently been a leader and innovator. The Ontario Agri-Food Venture Centre (OAFVC) located in Northumberland County, for instance, is a one-stop shop for food processing start-up companies and expansions in the province. The centre offers production, processing, packaging, storing, and business services designed to add value to food product.²⁴ As will be discussed further in the report, innovative research and technology clusters in the agri-food sector have emerged throughout the province. These clusters function to ensure that food producers and processors have the tools they need to create products more efficiently and sustainably.

GOING GLOBAL

The OCC administers the Global Growth Fund in partnership with the Government of Ontario. The Fund is a grant matching program which has helped over 400 Ontario businesses showcase goods and services to potential international buyers, participate in trade missions, develop promotional materials, and conduct market research.¹⁶ Through the Export Market Access (EMA) program from 2012-2015, \$5.5 million in grants generated \$167 million in export sales and created 534 jobs in the province. Throughout our consultations, agribusiness stakeholders emphasized the value of these government programs and services in facilitating trade relationships, particularly in emerging markets.

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RECOMMENDATIONS

SUMMARY OF RECOMMENDATIONS

1. Regulatory Environment:

- 1.1. Publicly release economic impact assessments of policy initiatives that could affect the agri-food sector to ensure decision-making is evidence-based, participatory, unbiased and transparent.
- 1.2. Promote the expansion of the federal/provincial/territorial (FPT) forum to include the alignment of federal and provincial regulatory priorities, agendas and approval processes.
- 1.3. Work with industry and all levels of government to establish a regulatory 'concierge service' to assist industry in understanding, navigating, and achieving compliance with relevant regulatory requirements.

2. Workforce/Skills Development:

- 2.1. Work with industry and post-secondary institutions to ensure that program offerings remain responsive to the needs of agricultural producers and processors.
- 2.2. Support programs that increase public awareness of the diversity and abundance of career opportunities in the agri-food sector.
- 2.3. Leverage existing electronic platforms (portals) to better connect job seekers to opportunities in the agri-food sector.

3. Infrastructure:

- 3.1. Expedite the expansion and reinforcement of natural gas utilities in rural areas.
- 3.2. Fully integrate the permitting process across provincial departments and with municipalities.
- 3.3. Prioritize Connecting Agribusinesses to the Digital Economy

4. Access to Risk Management Tools and Strategic Initiatives:

- 4.1. Advocate for the federal government to support the creation of a Payment Protection Program for produce sellers in Canada in the event of bankruptcies.
- 4.2. Establish Food and Beverage Processing as a priority area in the next Agricultural Policy Framework (APF).
- 4.3. Ensure that programming in the next APF is effective for the innovative producers of the agri-food sector.

5. Innovation:

- 5.1. Enhance Ontario's research competitiveness by restoring the reduced investment in applicable federal and provincial innovation tax credits.
- 5.2. Promote meaningful and well-resourced partnerships between industry, academic institutions and government by leveraging existing innovation networks.
- 5.3. Work with the federal government to develop a national bioeconomy strategy.

RECOMMENDATIONS

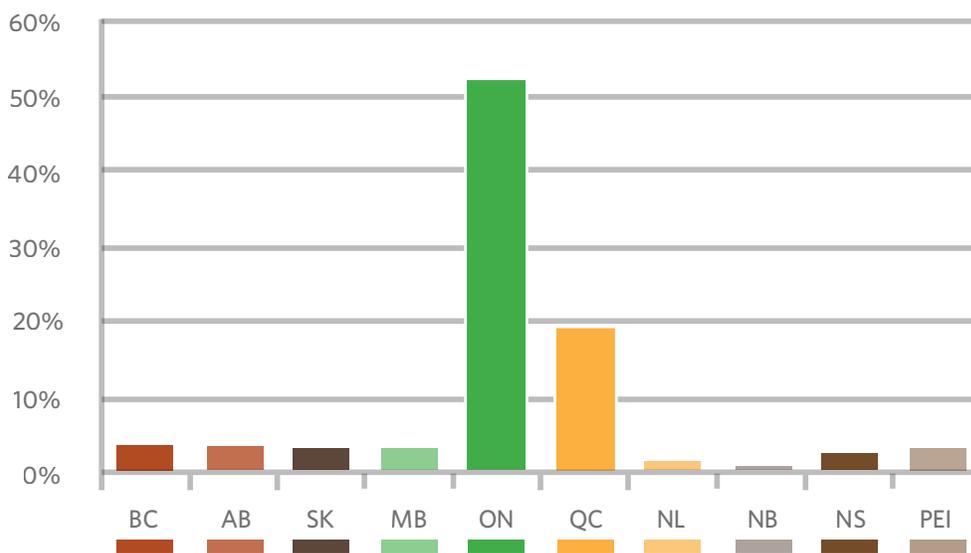
There is an opportunity to leverage the advantages outlined in the preceding section of the report to enhance the competitiveness of Ontario’s agri-food industry. What follows is an outline of five key indicators of agri-business competitiveness and associated recommendations. The five areas of focus are: i) the regulatory environment, ii) workforce and skills development, iii) infrastructure, iv) access to risk management tools, and strategic initiatives and v) innovation. With respect to each indicator, we have identified the most pressing factors affecting agribusiness competitiveness and advanced a series of recommendations designed to address those barriers.

A CALL TO ACTION

In 2013, Premier Kathleen Wynne challenged the agri-food sector to double its annual growth rate and create 120,000 jobs by 2020. It is estimated that Ontario must increase its production of food ingredients per unit of farmland by at least 3 percent per year in order to meet the Premier’s target and the demands of a growing provincial population.²⁵ Although we have now reached the halfway point in the challenge, the scorecard measuring the sector’s progress (see Table 1, p13) indicates that we are well behind the Premier’s target.²⁶ This is largely reflective of the serious pressures that agribusinesses are experiencing, including foreign competition and rising input costs. Since 2004, electricity prices have also increased dramatically by

383 percent, from a flat rate of 4.7 cents a kilowatt hour to 18 cents a kilowatt hour at peak times.²⁷ The rising cost of doing business has contributed to the closure of nearly 60 food processing plants and resulted in job losses of 12,379.²⁸ Although the evidence suggests that plant openings, investment and general business expansion balanced out some losses incurred by these closures, it remains highly concerning that Ontario experienced the largest net loss of plants in the country.²⁹ We are concerned that these costs will put Ontario businesses at a disadvantage relative to our counterparts in other provinces and around the world. Ontario agri-food producers and processors are committed to working alongside government to develop a regulatory environment that is responsive to the economic context in which businesses operate.

Figure 3. Gross Canadian Job Losses From Food Plant Closures by Province 2006-2014



Source: Sparling, David and Sydney LeGrow. *The Changing Face of Food Manufacturing in Canada: An Analysis of Plant Closings, Openings and Investments*. Canadian Agri-food Policy Institute



Table 1. Premier's Agri-Food Challenge

INDICATORS	2013 (A)	2014	5 YEAR CAGR (B) 2007-2012	% CHANGE 2013-2014	STRETCH TARGET 2020 (C)
GDP	\$34.5B	\$35.1B	0.4%	1.6%	\$40.0B
Jobs	764,473	781,639	1.3%	2.2%	859,735
Exports	\$11.8B	12.5 B	4.4%	5.5%	\$20.5B
Primary Agriculture Sales	\$12.3B	\$12.5B	5.4%	1.4%	\$20.0B
Food Processing Revenue (d,e)	\$36.9B	-	2.0%	-	\$51.48
Agriculture Investment (e)	\$1.1B	-	2.4%	-	\$1.01B
Food Processing Investment (e)	\$1.09B	-	1.1%	-	\$2.2B

Source: OMAFRA. 2015 Scorecard

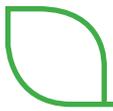
1. Regulatory Environment

In consulting with members of the agri-food sector it is clear that business has long felt overwhelmed and inhibited by a regulatory framework that is overly prescriptive and difficult to navigate. In order to comply with regulations, producers and processors are required to divert substantial resources to meet obligations. This affects their bottom line and their capacity to invest in growth. Notwithstanding these challenges, Ontario agribusinesses are now experiencing increased pressure to adapt processes to large-scale policy reform, including the introduction of the cap and trade system, waste elimination legislation, and delivered electricity costs that exceed those of competitor jurisdictions.

Previous OCC research has illustrated that the cumulative burden of recent government announcements is contributing to a higher cost of doing business in the province. It is essential that governments reduce, in a responsible manner, the cumulative burden that adversely

affects the competitiveness of the Ontario agri-food sector. We were encouraged by the government's decision to create and publish an inventory of all the regulatory requirements affecting the food processing sector as part of the Red Tape Challenge.³⁰ Stakeholders were invited to comment on the effectiveness of the 171 regulations that were identified throughout the consultation period from August 2 to September 30, 2016.³¹ We recognize this to be a necessary first step towards ensuring that red tape is kept to a minimum in Ontario.

By adopting a more flexible and responsive regulatory framework for protecting public interests, the government will advance the objectives of enhanced innovation, job creation and sustained economic growth in the province. It is encouraging that the Government of Ontario has initiated consultations on the regulation framework of the food-processing sector.³² As input into these consultations, the OCC would recommend the following to Government:



1.1: Publicly release economic impact assessments of policy initiatives that could affect the agri-food sector to ensure decision-making is evidence-based, participatory, unbiased and transparent.

While there is a provincial process in place to consult on regulation, Ontario does not have a process in place for publicly releasing and discussing economic impact assessments of policy initiatives. We recommend that the government adopt the approach recently implemented by the European Commission to ensure that decision-making is evidence-based, participatory, unbiased, and transparent.³³ Critical to the success of this approach is a robust post-implementation evaluation process in which decision makers determine whether the intervention has had the desired policy outcome(s). This process should involve a consideration of the unintended effects of the regulation on the competitiveness of the business community. By embedding these principles in the planning and policy cycle, the government will ensure that regulations are more responsive to the context in which agribusinesses operate and proportionate to the expected or observed outcomes.

1.2: Promote the expansion of the federal/provincial/territorial (FPT) forum to include the alignment of federal and provincial regulatory priorities, agendas and approval processes.

The shared federal-provincial jurisdiction in agriculture makes it possible for both levels of government to develop regulations. The failure of governments to effectively coordinate regulatory priorities often results in policy inconsistencies that are burdensome to businesses and contrary to government objectives.³⁴ As a first step towards ensuring better alignment, we propose a review of regulatory priorities, agendas, and approvals be formalized as an agenda item at the annual FPT Ministers of Agriculture meetings. The Regulatory Subcommittee (RSC) included a similar recommendation in its 2015 report to the Value Chain Roundtables All Chairs.³⁵ Furthermore, we recommend that governments work to introduce an effective and efficient process for resolving post-implementation conflicts.

1.3: Work with industry and all levels of government to establish a regulatory 'concierge service' to assist industry in understanding, navigating, and achieving compliance with relevant regulatory requirements

A number of ministries and departments at the federal, provincial and municipal level are involved in the development of agri-food related policies. In Ontario, for instance, agribusinesses are significantly affected by decisions made by over 15 provincial ministries.

Agribusinesses face a formidable challenge to remain responsive to regulatory changes made within these provincial portfolios as well as those made by departments and ministries at the federal level.

To assist industry in navigating the regulatory framework and achieving compliance, all levels of government should work with industry to develop a 'concierge service' that is easily accessible and positioned to share knowledge of all requirements. For example, the Government of Canada Concierge Service connects businesses to innovation funding, expertise, facilities and opportunities free of charge. Materials through the federal Concierge program are available online and users have the opportunity to call government for one-on-one assistance from an expert Innovation Advisor.³⁶ We recommend that the government develop a similar service to assist agribusiness owners and representatives as they navigate the regulatory framework.



2. Workforce and Skills Development

Ontario agriculture benefits greatly from an effective federal labour policy framework, whereby government-to-government agreements have established a reliable low skills labour program through the Seasonal Agricultural Worker Program (SAWP). This program is the envy of many countries and its importance to ensuring the competitiveness of Canadian agriculture cannot be overstated. Although SAWP covers some seasonal employment needs, agricultural producers and food processors also rely heavily on the Temporary Foreign Worker Program (TFWP) to meet labour demands.

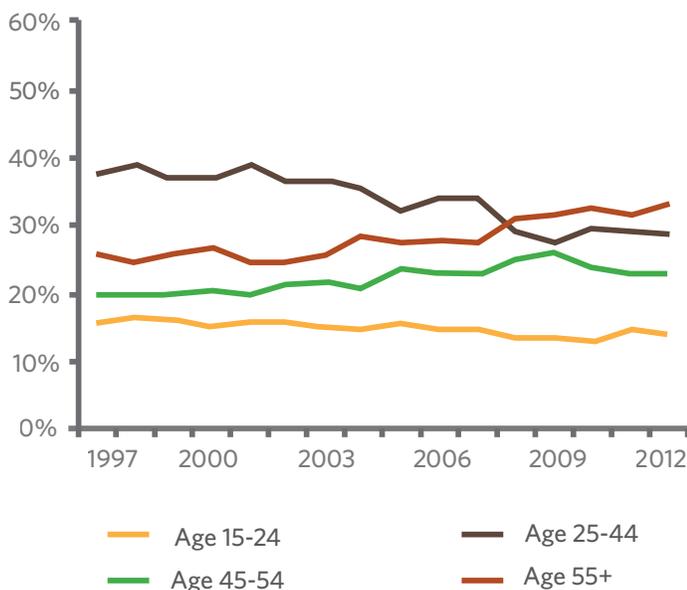
However, regarding high skilled jobs, industry stakeholders have experienced challenges throughout their efforts to recruit and retain employees. Research suggests that food and beverage processing jobs suffer from the negative perception that careers in this sector are low paying with minimal opportunities for advancement.

These perceptions do not align with the reality that many jobs in this sector offer good pay and opportunities for professional growth.³⁷

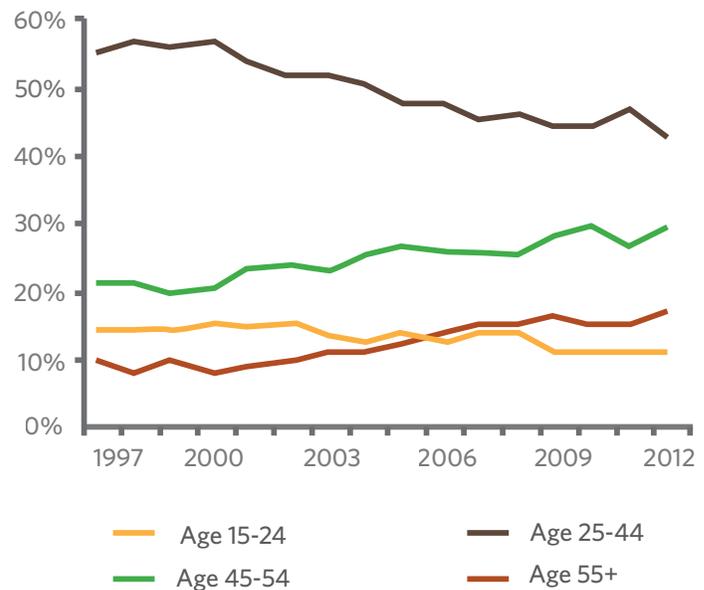
Other concerns regarding employment in the sector include location and the impact of an aging workforce. With respect to workforce aging, the largest share of workers in primary agriculture are over 55 years of age. Although workers in the 25 -45 age group continue to represent the largest share of employees in the food and beverage processing industry, the share of workers over 55 has increased significantly from 9.2 percent in 1997 to 17 percent in 2012.³⁸

Because of these factors, labour shortages have the potential to reduce the competitiveness of Ontario's agri-food sector going forward. In a 2009 survey conducted by the Canadian Agricultural Human Resource Council, one third of primary agriculture respondents indicated that they expected to need more employees within the next five years.³⁹

Fig 4
Share of Employment by Age Group
Primary Agriculture
1997-2012



Share of Employment by Age Group
Food Processing
1997-2012



Source: Labour Task Force. *Addressing Labour Shortages in the Agriculture and Agri-Food Industry through a National Workforce Action Plan*. <http://www.cahrc-ccrha.ca/sites/default/files/RevisedAgAgrifoodWorkforceActionPlan-EN-Feb132015.pdf>. Page 13.



Industry is taking action to address this challenge. In January 2015, for instance, Food and Beverage Ontario (FBO) launched the Taste Your Future campaign to raise awareness of the Ontario food and beverage sector as an employment opportunity, particularly among youth and new Canadians.

By building on this and other efforts, the government will contribute to the realization of the Premier's challenge to create 120,000 jobs by the year 2020.⁴⁰ The following actions would ensure that the supply and skills of workers meet the immediate and future needs of industry.

2.1: Work with industry and post-secondary institutions to ensure that program offerings remain responsive to the needs of agricultural producers and processors.

Ontario universities and colleges offer a variety of programs that prepare students for careers in agricultural production and processing that are reflective of the diversity of skills demanded by the sector. The Ontario Agriculture College (OAC) at the University of Guelph, for instance, provides instruction in areas of study as diverse as plant science, veterinary, and rural community planning.⁴¹

Throughout our consultations, stakeholders recognized the need to increase the capacity of existing agri-food programs and new programs to address gaps in the current system. In 2012, the OAC commissioned an assessment of human resource needs in the sector in which 60 percent of respondents indicated that they had a preference for formal training in agriculture and food when hiring.⁴² In addition to technical skills and industry knowledge, however, the study also revealed a growing demand among employers for soft skills including communication, teamwork, presentation, time management, and organization skills.⁴³ The OAC has adjusted its program offerings accordingly to provide students more tools and opportunities to develop these skills.

We recommend that government work with industry and post-secondary associations, such as Colleges Ontario and the Council of Ontario Universities, to ensure that program offerings remain responsive to the needs of agricultural producers and processors.

This could involve an updated assessment of human resources needs in the sector.

2.2: Support programs that increase public awareness of the diversity and abundance of career opportunities in the agri-food sector.

Food and Beverage Ontario (FBO) launched the Taste Your Future campaign in January 2015 with the objective of raising awareness of the Ontario food and beverage sector as an employment destination, particularly among youth and new Canadians.

Campaign research suggests that there is low awareness of the size and scope of the sector which generates \$41 billion in revenue, provides over 130,000 direct jobs and exports \$7.6 billion in product annually. Furthermore, as discussed above, survey respondents demonstrated a series of misconceptions that diminished their interest in pursuing careers in the sector. There is an opportunity to attract talent through the communication of fact-based messages that demonstrate the desirability and diversity of jobs in the sector.⁴⁴

The program is funded by Growing Forward 2 (GF2) and is part of the industry's efforts to create 60,000 new jobs in the sector by 2020. Continued funding for this and similar initiatives through the successor to GF2 would increase public awareness of the diversity and abundance of career opportunities in the agri-food sector.

2.3: Leverage existing electronic platforms (portals) to better connect job seekers to opportunities in the agri-food sector.

There are some existing websites that recruit talent in the agri-food sector including the Canadian Agricultural Human Resources Council, Food Processing Human Resources Council, Careers in Trades, BioTalent Canada, and ECO Canada. However, a dedicated and centralized employment resource where job and career opportunities in the agri-food industry can be easily located does not yet exist. A centralized hub where job seekers, employers, employment centres and educational counsellors can retrieve information on job competencies/skills and access job postings would significantly improve the appeal and potential of the agri-food sector as an employment destination.



3. Infrastructure

The federal government has committed to invest \$125 billion in infrastructure funding over the next ten years. Ontario will invest another \$160 billion over twelve years, including \$15 billion in infrastructure investment to projects outside of the GTHA. This includes \$100 million per year under the Ontario Community Infrastructure Fund to help small, rural and northern communities build and repair critical infrastructure as well as funds to expand transportation networks that will contribute to the movement of goods throughout the province.⁴⁵

In addition, the *Moving Ontario Forward* plan reiterated a 2014 commitment of \$200 million through the Natural Gas Access Loan as well as \$30 million through the Natural Gas Economic Development Grant to attract new industry, create jobs, and lower energy costs for businesses and consumers.⁴⁶

Natural gas offers a safe, reliable and cost effective alternative to electricity, propane or heating oil. Over eighty percent of Ontario farms and another 500,000 rural residences have no access to natural gas. Expanded gas lines in rural Ontario would give over 30,000 farms and small businesses access to substantial savings for heating barns, operating grain dryers and generating electricity on an as needed basis.⁴⁷ As articulated in recommendation 3.1, the realization of these commitments is necessary to attract and retain agri-food businesses in the province.

3.1: Expedite the expansion and reinforcement of energy assets that support economic development of the agri-food sector.

In the 2016 Budget, the Provincial government restated its 2014 commitment to introduce a loan program to support access to natural gas in 2016. Investment in this area is critical, particularly given that electricity constraints in many areas of the province restrict economic development and have led to local electricity grid instability, and risk damaging expensive equipment.

It is critical that government provide program details of its \$230 million commitment to expand natural gas infrastructure to ensure that Ontario rural communities

remain competitive and viable in terms of energy costs. Furthermore, a mechanism that supports competitive infrastructure development for the growth of the agri-food sector must be identified. Such a process will be vital to ensuring major electricity infrastructure projects proceed on a timeline that will prevent further investment leakage to competing jurisdictions.



PROFILE: THE ONTARIO GREENHOUSE SECTOR

Representing nearly one-third of production costs, energy access and pricing is a major concern for Ontario's greenhouse sector. While natural gas pricing is predicted to remain competitive, gaining access to this fuel source can sometimes require a long-term minimum use contract to cover the full cost of infrastructure. This 'beneficiary pay' model, which requires that end users bear the full cost of distribution level upgrades, was put in place to protect the rate payer base from increases associated with specific expansion projects to ensure there is no ratepayer cross subsidization. However, the unintended consequence of this policy is that it ensures capacity generated by these specific expansion projects is fully contracted when the pipeline goes in the ground, leaving no room for future growth and economic development. This has hampered greenhouse expansion in Essex County, for example, the center of Ontario's greenhouse vegetable sector.

Growers in this region are keen to secure "firm" natural gas service whereby they have access to a fixed volume of natural gas year round. With the limitations on natural gas infrastructure, many growers have had to settle for "interruptible" contracts whereby they must switch to a costly alternative fuel source during periods of extreme cold.

A similar policy on the electricity side has resulted in significant delays to Hydro One's Supply to Essex County Transmission Reinforcement ("SECTR") project which will bring much needed relief to Essex County's strained electrical grid. As the first major transmission project under the Ontario Energy Board's beneficiary pay model, the project has

been plagued with delays as discussions continue as to how project costs should be allocated. These delays and lack of short term access, along with favourable tax relief, have prompted some growers to invest in competing jurisdictions across the border. The Kingsville-based Golden Acre Farms, for example, recently announced they would build a vegetable greenhouse operation valued at US\$250 million in Ohio, recognizing that it will be able to grow vegetables year-around at that location due to better access to competitive electricity. In 2015, the Leamington based company Nature Fresh Farms similarly announced a \$200-million expansion in Ohio.⁴⁸

The Ontario Greenhouse Vegetable sector is a thriving contributor to Ontario's agricultural landscape. With a strong history of growth, the sector is poised for expansion, provided the business climate is conducive to do so. By conservative estimates, the sector could grow by another 750 acres over the next five years resulting in a cumulative economic impact of:

- Over \$550 million in direct construction investment;
- The creation of nearly 3,000 jobs;
- A cumulative five-year sector-wide contribution of over \$9 billion to the Ontario economy; and,
- Exports totaling \$4 billion over the next five years.⁴⁹

Ensuring infrastructure that supports economic development and diversifies risk amongst all beneficiaries is critical to ensuring this investment remains in Ontario.



3.2: Improve alignment and coordination of regulatory bodies at all levels of government without compromising the quality of the assessments.

Local food processors in Ontario recognize that much of the productivity growth that they hope to achieve will require investment in plant capacity. The expansion of existing and creation of new plants is good news for Ontario. In 2011, for example, Canada Bread opened the Hamilton Fresh Bakery Plant that supports approximately 300 full time and 30 seasonal jobs.⁵⁰ More recently, the Government of Ontario partnered with Mortimer's Fine Foods to expand the company's facility. The \$680,000 investment is expected to have a total value of \$6.8 million in increased productivity and exports. In addition, the expansion allowed the company to create 14 new jobs and retain 16 existing jobs.⁵¹

It is evident that these investments lead to job creation and economic development, as well as support future product innovation. Throughout our consultations, however, stakeholders commented that their efforts to expand or construct new facilities are challenged by fragmentation throughout the permitting process. While sharing their experience engaging with regulatory authorities to secure 14 permits, one business owner commented that multiple levels of government appeared to be reviewing the same evidence, albeit with slightly different requirements which created significant confusion at additional cost.

Stakeholders also emphasized that 'time is money'. Given that projects cannot proceed without regulatory approvals, it is critical that regulatory authorities facilitate the process as expeditiously as possible to ensure that businesses are able to open their doors within a reasonable period. These concerns were articulated in the Jobs and Prosperity Council report *Advantage Ontario* in 2012. That report observed that "slow turnaround time for approving permits are creating significant delays for Ontario businesses looking to undertake job-creating development projects".⁵² Furthermore, the Council recognized that "these delays indicate that regulatory efficiency and approaches to risk management could be improved, especially with regard to environmental

assessments and permitting approvals without affecting regulatory standards."⁵³

We maintain the Council's position and suggest that many of the challenges experienced by agribusinesses throughout the permitting process could be resolved through the improved alignment and coordination of regulatory bodies at all levels of government without compromising the quality of the assessments.

3.3: Prioritize Connecting Agribusinesses to the Digital Economy

Agribusinesses should not be disadvantaged as a result of being located in rural, remote or Northern areas. Unfortunately, some of the communities in these areas have access to less than the standard internet speed established by the Canadian Radio-television and Telecommunications Commission (CRTC) of 5Mbps.

Consistent with our earlier positioning on this issue, we recognize that the current broadband infrastructure is insufficient to support globally-competitive agricultural practices in Ontario, many of which are optimized through internet connectivity.

A recent Ontario Federation of Agriculture (OFA) survey revealed that 94 percent of farmers perceive access to the internet as being of importance to their business.⁵⁴ Today's farms rely on data-based management and advanced technologies to identify and address issues that have the potential to affect crop yields, including irrigation problems and fungal or pest infestations.⁵⁵

Throughout our consultations, we heard from farmers who had invested in technology that they were unable to use efficiently due to insufficient internet access. Others indicated that they continued to use less efficient technology with the knowledge that they lacked the connectivity required to optimize newer equipment.

While we were encouraged by the provincial and federal governments' recent announcement to invest a total of \$180 million in the SouthWest Integrated Fibre Technology (SWIFT) initiative, we continue to advocate for government to develop a robust broadband investment strategy that acknowledges broadband as an essential infrastructure investment and provides equitable access to the Internet throughout the province.

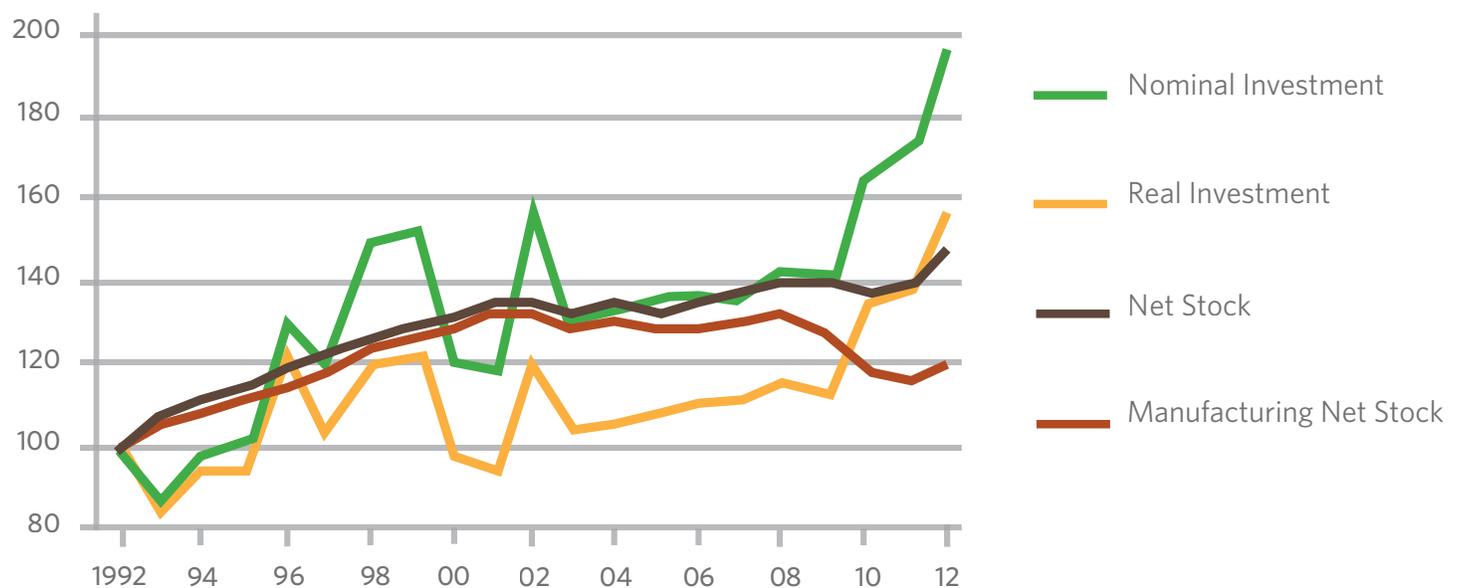
RECOMMENDATIONS

4. Access to Risk Management Tools and Strategic Initiatives

The food industry is capital-intensive. Canada's agri-food industry invests upwards of \$14 billion per year in fixed capital, including buildings and equipment. Approximately 40 percent of this spend was directed towards the maintenance of existing capital.⁵⁶

Figure 5. Investment Performance Food and Beverage and Overall Manufacturing

(1992 = 100)



Source: Statistics Canada CANSIM Table 031-0002

As demonstrated in Figure 5, food manufacturing sector investment and net capital stock has increased significantly since the early 1990s.⁵⁷ This trend is illustrative of the recognition among industry that investment in capital can result in enhanced productivity and improve return on assets.⁵⁸

The federal and provincial governments have developed a variety of programs designed to foster economic development, as outlined in the recent OCC report *Breaking Barriers: Ontario's Scale Up Challenge*. However, these programs are not necessarily oriented towards factors that influence growth and are largely associated with unnecessarily restrictive eligibility criteria.⁵⁹

Agriculture and Agri-Food Canada (AAFC) administers three broad federal programs through the Growing Forward 2 (GF2) initiative totaling an investment of \$1 billion aimed at generating market-based economic growth in the agricultural sector⁶⁰:

1. AgrilInnovation: investments targeted at research and development activities and at enabling commercialization and adoption of research.⁶¹
2. AgriCompetitiveness: investments targeted towards programs and tools that will "help the sector adapt to rapidly changing and emerging global and domestic opportunities and issues, respond to market trends and enhance business and entrepreneurial capacity".⁶²

RECOMMENDATIONS

3. AgriMarketing: investments designed to help farmers and food processors compete in markets at home and abroad.⁶³

Additionally, the investment under GF2 includes \$2 billion for cost-shared programs on a 60:40 basis delivered by the provinces and territories, to ensure funded programs are tailored to meet regional needs. The Ontario program supports projects in the following six areas: environment and climate change adaptation, animal and plant health, assurance systems, market development, labour productivity enhancement, and business and leadership development.

The federal and provincial governments are in the process of consulting industry on the successor initiative to GF2.⁶⁴ Throughout our consultations, stakeholders articulated that there is an opportunity for GF2 and other government programs to better reflect the unique funding needs and strategies of agri-food throughout the supply chain.⁶⁵ The recommendations in this section have been designed to achieve this objective.

4.1: Advocate for the federal government to support the creation of a limited statutory deemed trust that provides financial protection for produce sellers in Canada in the event of bankruptcies.

Historically, Canadian and Ontario agriculture businesses were protected under a long standing preferential access to the U.S. Perishable Agricultural Commodities Act (PACA). This preferential access was revoked by the U.S. Department on Agriculture on October 1, 2014. This has had significant consequences for the fresh produce industry in Canada.

According to the Canadian Produce Marketing Association, the changes to PACA rules will result in a permanent loss to Canada's GDP of at least \$12.7 million annually. The lost production results in a permanent loss of 154 jobs and \$5.9 million in labour income. The creation of a limited statutory deemed trust that provides financial protection for produce sellers in Canada in the event of bankruptcies and will meet the U.S. requirements for a comparable Canadian system in order to reinstate

our preferential access to PACA.⁶⁶

4.2: Establish Food and Beverage Processing as a priority area in the successor initiative to Growing Forward 2.

Food and beverage processing is an economic driver in the province. It is critical that the Ontario and Canadian governments recognize food and beverage processing as a priority area in the successor initiative to the GF2 to support growth and innovation in the sector.

4.3: Ensure that programming in the successor initiative to Growing Forward 2 is effective to sustain a profitable and innovative agri-food sector.

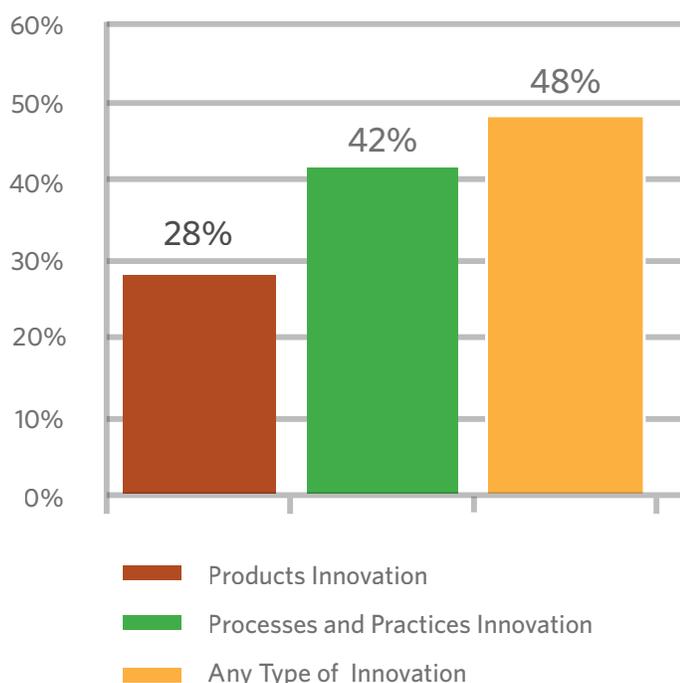
It is critical that emerging priority issues, such as climate change and phosphorus reduction, be addressed through a distinct funding envelop and do not draw from existing adaptation funds which are already in short supply.



5. Innovation

As recognized by Agriculture and Agri-food Canada, “farm level innovation is a key driver of farm productivity growth and efficient use of natural resources leading to a profitable and sustainable primary agriculture sector”. Nearly half of Canadian farms implemented new products, processes, and practices between 2011 and 2013.⁶⁷

Figure 6. Percentage of Farm Operations that Introduced New or Significantly Improved Products, Processes or Practices Between 2011 and 2013



Source: Statistics Canada 2013, Farm Financial Survey

Unfortunately, Canada is far from a world leader in research and development. The World Economic Forum ranks Canada as 22nd in capacity for innovation, 22nd in technological readiness, and 27th in company spending on research and development (R&D). Canada’s R&D spending as a percentage of GDP has been declining for over a decade and is now 1.69 percent, compared to the OECD average of 2.4 percent.⁶⁸

Canada is the only developed country in the world with an intellectual property deficit. We spend more importing technology from other countries than we earn selling technology abroad. This gap costs \$4.5 billion a year.⁶⁹

Despite these challenges, Ontario is recognized around the world as a leader in agri-food research. The Agricultural Research Institute of Ontario (ARIO) oversees 17 agri-food research facilities that were most recently valued at \$60 million.⁷⁰ The research conducted at these facilities contributes to the safety of made-in Ontario foods as well as the identification of new opportunities for residues or purpose grown crops.⁷¹

Recognizing the emergence of the bioeconomy, the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) has directed funding to support research focused on bioenergy, biomaterials, and biochemicals primarily through the New Directions Research Program and the OMAFRA/University of Guelph Partnership Research Program.⁷² The bioeconomy refers to the use of renewable resources derived from plants and waste to produce a wide range of products, including bio-fuels and plastics, while minimizing impact on the environment.⁷³ The industry in Canada consists of over 200 firms, employs over 3,000 people and generates \$1.3 billion in annual revenues.⁷⁴ As recognized in recommendation 5.3, however, there is an opportunity to enhance the sector through the development of a national bioeconomy strategy.

In order to build on the success of Ontario agri-food research and to continue to drive innovation in the sector, we recommend that government take the following actions:

5.1: Enhance Ontario’s research competitiveness by restoring the reduced investment in applicable federal and provincial innovation tax credits.

The Government of Ontario’s 2016 budget cut the Ontario Research and Development Tax Credit (ORDTC) from 4.5 percent to 3.5 percent,⁷⁵ and the Ontario Innovation Tax Credit (OITC) from 10 percent to 8 percent.⁷⁶ The Government of Canada similarly cut the SR&ED tax credit from 20 percent to 15 percent in 2014.⁷⁷ The reduction of these investments has made Ontario less open to innovation. Restoring investment in these areas is a necessary step to restoring Canadian competitiveness



in innovation. To address any concerns about the effectiveness of these funds, government can consider a robust economic impact analysis and reporting process that ensures levels of investment are well aligned with demonstrated need.

5.2: Promote meaningful and well-resourced partnerships between industry, academic institutions and government by leveraging existing innovation networks.

Food and Beverage Ontario has brought together stakeholders in industry, academia, government, research and not-for-profits to strengthen the network of communication and outreach on currently available innovation assets and to identify gaps. This initiative is transitioning to a formalized Ontario Innovation Network that will leverage and capitalize on existing assets, develop new assets and advance innovation as a means to improve competitiveness and productivity for the sector. Success of the network will be contingent on meaningful and well-resourced industry-government-academic partnerships.

5.3: Work with the federal government to develop a national bioeconomy strategy.

Ontario is home to many companies and organizations working to develop the Ontario bioeconomy. Despite the emergence of the bioeconomy in Ontario, other jurisdictions are becoming increasingly competitive as sites for investment and development. In April 2012, the United States government released its National Bioeconomy Blueprint. The document outlines the government's strategy to realize the full potential of the U.S. bioeconomy through implementation of the following five objectives: support research and development investments; facilitate the commercialization of bioinventions; improve regulatory processes and regulations; update training programs to align with industry needs; and support opportunities for public-private partnerships.

To date, the U.S. government has invested more than \$237.2 million in bioeconomy research, development and education grants.⁷⁸ It is estimated that the bioeconomy currently contributes approximately \$50 billion and

over 250,000 jobs to the US economy.⁷⁹ In addition to its evident economic potential, the development of the bioeconomy is associated with numerous environmental benefits including reduced greenhouse gas emissions.⁸⁰

By working with the federal government to develop a national bioeconomy strategy comparable to the US model, the provincial government would contribute to the development of programs designed to meet the needs of this high-growth industry.



HIGHLIGHTING THE SUCCESS AND DIVERSITY OF AGRI-FOOD AND BIOECONOMY CLUSTERS IN ONTARIO

A cluster is a proximate assembly of interconnected firms and institutions, usually operating within the same industry or closely related industries.⁸¹ Innovative research and technology clusters in the agri-food sector have emerged throughout the province. Among other benefits, these clusters have facilitated the creation of new products and jobs as well as enhanced support for entrepreneurial endeavors and improved efficiency throughout production. The following represent a few of the most prominent clusters in Ontario, each of which benefits from access to world-class talent graduating from nearby post-secondary institutions and access to trade-enabling infrastructure.

- Demand for renewable chemicals in the global marketplace is increasing. This represents a new opportunity for agricultural producers. The **Sarnia Bioindustrial Park** is home to the world's largest succinic acid plant, BioAmber. The company refers to succinic acid as "a renewable building block that can be used to make a wide range of products" including paints, adhesives, artificial leather, cosmetics and flavor additives.⁸² Bioindustrial Innovation Canada (BIC) is also located in Sarnia. In recent months, the provincial and federal governments announced a total investment of \$15 million to support bio-based innovations in Sarnia.⁸³ The investment is expected to create 478 full time jobs and 250 new industrial collaborations.⁸⁴ This cluster also benefits from easy access to important markets: in addition to being "within a one day drive of 65 percent of the U.S. market as well as major Ontario and Quebec markets", Sarnia-Lambton is also connected to the St. Lawrence Seaway System and St. Clair Railway tunnel and is in close proximity to the Detroit International Airport.⁸⁵
- Recognizing the opportunity to find new uses for forest product, the Government of Ontario established the **Centre for Research and Innovation in the Bio-economy (CRIBE)** in 2009. Located in Thunder Bay, CRIBE is well positioned to work with partnering organizations, including the bio-refining research institute at Lakehead University and Confederation College, to develop and support initiatives designed to diversify the economy of Northern Ontario.⁸⁶ CRIBE recently invested of \$1.5 million to increase the production capacity of Ensyn Technologies Renfrew facility. The investment created 14 full time jobs.⁸⁷ The cluster also benefits from its close proximity to the Port of Thunder Bay, located at the head of the Great Lakes/St. Lawrence Seaway system which generates \$369 million in economic activity and 1,800 jobs in Ontario.⁸⁸
- The **Guelph Agri-food Research and Innovation Cluster**, which includes the University of Guelph and the Ontario Ministry of Agriculture, Food and Rural Affairs as well as numerous industry groups and international companies, contributes 6000 jobs to Ontario's economy.⁸⁹ Graduates of the Ontario Agriculture College and Ontario Veterinary College possess relevant skills that contribute to agri-food research and innovation, as are those of neighbouring universities and colleges with complementary specialties in areas such as engineering and pharmacy.⁹⁰ The cluster also benefits from strong commercialization partners, including the Ontario Agri-Food Technologies (OAFT), and its central location; over 150 million North American consumers are within one day's drive from Guelph and the city is within close proximity to Toronto Pearson International Airport which facilitates over 1,200 flights per day around the world.⁹¹

CONCLUSION

Though a fundamental part of our economy, the Ontario agri-food sector is pressured by a variety of factors, such as rising input costs and a regulatory framework that is overly prescriptive and difficult to navigate. In this report, we outlined a series of recommendations designed to redress these challenges and help grow the competitiveness of the sector. In order for agribusiness to thrive, the Government of Ontario, and other partners, must remain committed to reducing regulatory burden, improving access to risk management tools and making strategic investments in infrastructure, skills and innovation.

Despite the pressures that the sector is experiencing, agri-food remains an economic driver in the province. In large part, we attribute this to the resiliency and responsiveness of Ontario agribusinesses to changes in the global context. The strengths of the sector contribute to the production of traceable, safe and innovative products that are renowned around the world.

We are encouraged by the federal and provincial governments' efforts to engage stakeholders throughout the development of the next Agricultural Policy Framework (APF) and to identify inefficient regulations in the food processing sector as part of the Red Tape Challenge. These represent clear opportunities to update the current policy framework to be more responsive to the economic context in which agribusinesses operate. By taking immediate action to implement the recommendations outlined in the report, the government will plant the seeds of long-term prosperity in Ontario.

As reflected in our stakeholder consultations, the Ontario business community looks forward to working with government on initiatives to grow the competitiveness of the agri-food sector.

WORKS CITED

- ¹ Agriculture and Agri-Food Canada, 2013. *An Overview of the Canadian Agriculture and Agri-Food System*. <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/alphabetical-listing/an-overview-of-the-canadian-agriculture-and-agri-food-system-2013/?id=1331319696826>.
- ² Food and Farming Canada. 2016. *Measuring Agriculture's Economic Footprint in Ontario*. <https://www.foodandfarmingcanada.com/2010/10/14/measuring-agricultures-economic-footprint-in-ontario/>.
- ³ Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), 2016. *Gross Domestic Product, Agri-food Sector 2007-2015*. http://www.omafra.gov.on.ca/english/stats/economy/gdp_agrifood.htm.
- ⁴ Agriculture and Agri-Food Canada (AAFC). *Significance of the Food and Beverage Processing Industry in Canada*. <http://www.agr.gc.ca/eng/industry-markets-and-trade/statistics-and-market-information/by-product-sector/processed-food-and-beverages/significance-of-the-food-and-beverage-processing-industry-in-canada/?id=1174563085690>.
- ⁵ Boutilier, Scott. 2015. *Clean Profits: Pricing Carbon and Embracing the Economic Potential of Cap and Trade*. Ontario Chamber of Commerce. <https://www.ny.gov/programs/broadband-all>. Page 8.
- ⁶ Challinor, Ashley. 2016. *Renewing Recycling in Ontario: Ontario Chamber of Commerce Submission to the Ministry of the Environment and Climate Change on the Waste-Free Ontario Act*. <http://www.occ.ca/wp-content/uploads/2013/05/Waste-Free-Ontario-Act-Submission-April-2016.pdf>. Page 4.
- ⁷ Sparling, David and Erin Cheney. 2014. *The Performance of Canada's Food Manufacturing Industry*. http://www.capi-icpa.ca/pdfs/2014/CAPI-PFRP_P3a.pdf. The Canadian Agri-food Policy Institute.
- ⁸ Agriculture and Agri-Food Canada, 2015. *An Overview of the Canadian Agriculture and Agri-Food System*. Print. Page 67.
- ⁹ Canadian Agri-food Policy Institute. 2011. *Canada's Agri-food Destination: A New Strategic Approach*. http://capi-icpa.ca/destinations/CAPI-Agri-Food_Destination_FULL.pdf. Page 54.
- ¹⁰ CNBC. 30 June 2015. *Food Fight! The Next Battle for China e-commerce*. <http://www.cnn.com/2015/06/30/food-fight-the-next-battle-for-china-e-commerce.html>.
- ¹¹ Agriculture and Agri-Food Canada. 2014. *Consumer and Retail Trends in China*. <http://www.agr.gc.ca/eng/industry-markets-and-trade/statistics-and-market-information/agriculture-and-food-market-information-by-region/asia/market-intelligence/consumer-and-retail-trends-in-china/?id=1421864821481>.
- ¹² Government of Ontario. 10 November 2015. *Quebec and Ontario Agriculture Ministers Partner on Building Agri-food Sectors*. <https://news.ontario.ca/omafra/en/2015/11/quebec-and-ontario-agriculture-ministers-partner-on-building-agri-food-sectors.html>.
- ¹³ Ontario Ministry of Agriculture, Food and Rural Affairs. 2016. *Ontario Agri-Food Trade by Region, 2005 - 2015*. <http://www.omafra.gov.on.ca/english/stats/trade/region.htm>.
- ¹⁴ Government of Ontario. *Going Global Trade Strategy*. <https://dr6j45jk9xcmk.cloudfront.net/documents/665/tradestrategy-en.pdf>.
- ¹⁵ Government of Ontario. 2016. *Premier's China Mission Leads to Investment Valued at Over \$212 Million*. <https://news.ontario.ca/opo/en/2016/03/premiers-china-mission-leads-to-investment-valued-at-over-212-million.html>.
- ¹⁶ Ontario Chamber of Commerce. 2016.
- ¹⁷ Office of the Prime Minister. 2015. *Minister of Agriculture and Agri-food Mandate Letter*. <http://pm.gc.ca/eng/minister-agriculture-and-agri-food-mandate-letter>.
- ¹⁸ Government of Ontario. 2014. *Mandate Letter: Agriculture, Food and Rural Affairs*. <https://www.ontario.ca/page/2014-mandate-letter-agriculture-food-and-rural-affairs>.
- ¹⁹ OMAFRA. 2016. *Ontario Updating Soil Map to Support Farmers' Environmental Stewardship Efforts*. <https://news.ontario.ca/omafra/en/2016/04/ontario-updating-soil-map-to-support-farmers-environmental-stewardship-efforts.html>.
- ²⁰ OMAFRA. 2016. *Canada-Ontario Environmental Farm Plan*. <http://www.omafra.gov.on.ca/english/environment/efp/efp.htm>.
- ²¹ Canadian Agri-food Policy Institute. 2011. *Canada's Agri-food Destination: A New Strategic Approach*. http://capi-icpa.ca/destinations/CAPI-Agri-Food_Destination_FULL.pdf. Page 55.
- ²² Dr. Caldwell, Wayne. *The Friends of the Greenbelt Foundation. 2015. The Agricultural System: Components, Linkages, and Rationale*. Print. Page 4.
- ²³ University of Guelph. 2016. *Innovation and Partnerships*. http://www.uoguelph.ca/omafra_partnership/research/en/innovationpartnerships/InnovationAndPartnerships.asp
- ²⁴ Ontario Agri-food Venture Centre. 2016. *About OAFVC*. <http://oafvc.ca/content/about-oafvc>
- ²⁵ Sustainable Farms. 2015. *Farm, Food & Beyond: Our Commitment to Sustainability*. <http://www.sustainablefarms.ca/wp-content/uploads/2015/09/OurFarmSustainableAgenda-LR.pdf>. Pg. 3.



- ²⁶ OMAFRA. 2015 Scorecard. http://www.omafra.gov.on.ca/english/stats/economy/growthtargets/summit_placemat.htm.
- ²⁷ Ontario Energy Board, 2016. *OEB Sets New Summer Electricity Prices for Households and Small Businesses*. http://www.ontarioenergyboard.ca/oeb/_Documents/Press%20Releases/NR_RPP-TOU_20160414.pdf.
- ²⁸ Sparling, David and Sydney LeGrow. *The Changing Face of Food Manufacturing in Canada: An Analysis of Plant Closings, Openings and Investments*. Canadian Agri-food Policy Institute. <http://www.conseiltaq.com/documents/pdf/Full%20Report%20-%203b.pdf>. Page 6.
- ²⁹ Sparling, David and Sydney LeGrow. *The Changing Face of Food Manufacturing in Canada: An Analysis of Plant Closings, Openings and Investments*. Canadian Agri-food Policy Institute. <http://www.conseiltaq.com/documents/pdf/Full%20Report%20-%203b.pdf>. Page 6.
- ³⁰ Government of Ontario. 2016. *Red Tape Challenge: Food Processing*. <https://talks.ontario.ca/redtapechallenge/>.
- ³¹ Government of Ontario. 2016. *Red Tape Challenge*. <https://www.ontario.ca/page/red-tape-challenge>.
- ³² Government of Ontario. 2016. *Red Tape Challenge*. <https://www.ontario.ca/page/red-tape-challenge>.
- ³³ European Commission. *Better Regulation 'Toolbox.'* http://ec.europa.eu/smart-regulation/guidelines/docs/br_toolbox_en.pdf. Page 7.
- ³⁴ Bloom, Michael et al. 2011. *Governing Food: Policies, Laws and Regulations for Food in Canada*. The Conference Board of Canada. http://www.conferenceboard.ca/temp/68bc8471-961a-4617-8f08-66f408641562/12-043_governingfood_rpt.pdf. Page 14.
- ³⁵ Regulatory Subcommittee Report; 2015 Regulatory Subcommittee Report to the Value Chain Roundtables All Chains
- ³⁶ Government of Canada. *Concierge: Your Guide to Innovation*. <https://concierge.innovation.gc.ca/en/home>.
- ³⁷ Food and Beverage Ontario.
- ³⁸ Labour Task Force. *Addressing Labour Shortages in the Agriculture and Agri-Food Industry through a National Workforce Action Plan*. <http://www.cahrc-ccrha.ca/sites/default/files/RevisedAgAgrifoodWorkforceActionPlan-EN-Feb132015.pdf>. Page 13.
- ³⁹ Canadian Agricultural Human Resource Council. 2009. *Labour Market Information on Recruitment and Retention in Primary Agriculture*. <https://www.cahrc-ccrha.ca/sites/default/files/files/publications/LMI-Recruitment-Retention/LMI%20Executive%20Summary.pdf>.
- Page 19.
- ⁴⁰ OMAFRA. The Premier's Agri-Food Challenge: Building On Success. <http://www.omafra.gov.on.ca/english/about/agrifoodchallenge.htm>.
- ⁴¹ University of Guelph. 2016. *Ontario Agricultural College: Areas of Study*. <https://www.uoguelph.ca/oac/areas-study>,
- ⁴² JRG Consulting Group. 2012. *Planning for Tomorrow for OAC: Input from Industry*. Ontario Agriculture College. Print. Page 2.
- ⁴³ JRG Consulting Group. 2012. *Planning for Tomorrow for OAC: Input from Industry*. Ontario Agriculture College. Print. Page 3.
- ⁴⁴ Food and Beverage Ontario. 2016. *FBO Awareness Campaign Research Report*.
- ⁴⁵ Ministry of Economic Development, Employment, and Infrastructure (MEDI). *Building Ontario Up: Discussion Guide for Moving Ontario Forward - Outside the GTHA*. [https://www.oswca.org/uploads/moving-forward-report-accessible-\(1\).pdf](https://www.oswca.org/uploads/moving-forward-report-accessible-(1).pdf). Page 4.
- ⁴⁶ MEDEI. 2015. *Building Ontario Up: Discussion Guide for Moving Ontario Forward - Outside the GTHA*. Page 5.
- ⁴⁷ Ontario Federation of Agriculture, 2015. *Natural Gas Infrastructure*. <http://www.ofa.on.ca/issues/overview/natural-gas-infrastructure>
- ⁴⁸ Macaluso, Grace. 2016. *Bain Urges Province to Move 'Sooner than Later' on New Transmission Line*. The Windsor Star. <http://windsorstar.com/business/local-business/bain-urges-province-to-move-sooner-than-later-on-new-transmission-line>
- ⁴⁹ Ontario Greenhouse Vegetable Growers. 2016. *OGVB Submission to the Ministry of Finance 2016 Pre-Budget Consultation*. Print.
- ⁵⁰ Food in Canada. *Canada's Largest Bakery Opens*. <http://www.foodincanada.com/food-business/canadas-largest-bakery-opens-43160/>.
- ⁵¹ Ministry of Economic Development and Growth. 2016. *Ontario Partnering with Mortimer's Fine Foods to Create Jobs in St. Catharines*. <https://news.ontario.ca/medt/en/2016/07/ontario-partnering-with-mortimers-fine-foods-to-create-jobs-in-st-catharines.html>.
- ⁵² Government of Ontario. 2012. *Advantage Ontario*. <https://www.ontario.ca/page/advantage-ontario>.
- ⁵³ Government of Ontario. 2012. *Advantage Ontario*. <https://www.ontario.ca/page/advantage-ontario>.
- ⁵⁴ Ontario Federation of Agriculture. 2016. *Ontario Federation of Agriculture Submission to the Ontario Standing Committee on Finance and Economic Affairs*. <http://www.ofa.on.ca/issues/submission/ofa-pre-budget-submission-2016>. Pg. 6.



- ⁵⁵ Anderson, Chris. 2016. Agriculture Drones: Relatively Cheap Drones with Advanced Capabilities are Giving Farmers New Ways to Increase Yields and Reduce Crop Damage. MIT Technology Review. <https://www.technologyreview.com/s/526491/agricultural-drones/>.
- ⁵⁶ Conference Board of Canada. 2013. *Funding Food*. <http://www.conferenceboard.ca/cfic/research/2013/fundingfood.aspx>. Page 14.
- ⁵⁷ Conference Board of Canada. 2013. *Funding Food*. Page. 31.
- ⁵⁸ Conference Board of Canada. 2013. *Funding Food*.
- ⁵⁹ Boutilier, Scott. 2016. *Breaking Barriers: Ontario's Scale Up Challenge*. Ontario Chamber of Commerce. <http://www.occ.ca/wp-content/uploads/2013/05/Breaking-Barriers-Ontarios-Scale-Up-Challenge.pdf>. Page 10.
- ⁶⁰ Agriculture and Agri-Food Canada. 2016. *Growing Forward 2*. <http://www.agr.gc.ca/eng/about-us/key-departmental-initiatives/growing-forward-2/?id=1294780620963>.
- ⁶¹ Agriculture and Agri-Food Canada. *AgriInnovation Program*. <http://www.agr.gc.ca/eng/programs-and-services/list-of-programs-and-services/agriinnovation-program/?id=1460123349608>.
- ⁶² Agriculture and Agri-Food Canada. *AgriCompetitiveness Program*. <http://www.agr.gc.ca/eng/?id=1359338007173>.
- ⁶³ Agriculture and Agri-Food Canada. *AgriMarketing Program*. <http://www.agr.gc.ca/eng/?id=1357941192614>.
- ⁶⁴ Agriculture and Agri-Food Canada. 2016. *Minister of Agriculture Seeking Policy Input on the Current and Next Agricultural Policy Framework*. <http://news.gc.ca/web/article-en.do?nid=1062889&tp=1>.
- ⁶⁵ Conference Board of Canada. 2013. *Funding Food*. Page 25.
- ⁶⁶ *Financial Protection for Canada's Fresh Fruit and Vegetable Industry*. OCC Resolution authored by the Windsor-Essex Regional Chamber of Commerce.
- ⁶⁷ Agriculture and Agri-Food Canada, 2013. *An Overview of the Canadian Agriculture and Agri-Food System*. <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/alphabetical-listing/an-overview-of-the-canadian-agriculture-and-agri-food-system-2013/?id=1331319696826>. Page 57.
- ⁶⁸ OECD, *Science, Technology and Industry Scoreboard 2015*.
- ⁶⁹ Standing Committee on Industry, Science and Technology. March 2013. *The Canadian Intellectual Property Regime – Dissenting Opinion of the New Democratic Party*. <http://www.parl.gc.ca/content/hoc/Committee/411/INDU/Reports/RP6038442/indurp03/indurp03-e.pdf>.
- ⁷⁰ OMAFRA. 2014. *Agricultural Research Institute of Ontario Business Plan 2016-19*. <http://www.omafra.gov.on.ca/english/research/ario/businessplan2016.htm#activities>.
- ⁷¹ Agriculture and Agri-Food Canada. 2016. Guelph Research and Development Centre. <http://www.agr.gc.ca/eng/science-and-innovation/research-centres/ontario/guelph-research-and-development-centre/?id=1180620168432>
- ⁷² OMAFRA. *OMAFRA Funding Promotes Innovative Bioresearch*. Print.
- ⁷³ Sarnia Lambton Chamber of Commerce. 2015. *Advance Ontario's Bioeconomy*. Print.
- ⁷⁴ The Canadian Trade Commissioner Service. 2016. *Bioproducts*. <http://www.international.gc.ca/investors-investisseurs/sector-secteurs/bioproduit-bioproduct.aspx?lang=eng/>.
- ⁷⁵ Ontario Ministry of Finance. 2016. *Ontario Research and Development Tax Credit*. <http://www.fin.gov.on.ca/en/credit/ordtc/>.
- ⁷⁶ Ontario Ministry of Finance. 2016. *Ontario Innovation Tax Credit*. <http://www.fin.gov.on.ca/en/credit/oitc/>.
- ⁷⁷ Canada Revenue Agency. 2014. *SR&ED Investment Tax Credit Policy*. <http://www.cra-arc.gc.ca/txcrdt/sred-rsde/clmng/srdnvtmmttxcrdt-eng.html>.
- ⁷⁸ United States Department of Agriculture. 2016. *USDA Announces \$21 Million Available for Bioeconomy Research and Development*. <http://www.usda.gov/wps/portal/usda/usdahome?contentid=2016/05/0122.xml&contentidonly=true>.
- ⁷⁹ Biomass R&D Board. 2016. *Federal Activities Report on the Bioeconomy*. http://www.biomassboard.gov/pdfs/farb_2_18_16.pdf. Page 7.
- ⁸⁰ Biomass R&D Board. 2016. *Federal Activities Report on the Bioeconomy*. http://www.biomassboard.gov/pdfs/farb_2_18_16.pdf. Page 6.
- ⁸¹ ICP, 2016.
- ⁸² BioAmber. 2016. *Our Products*. https://www.bio-amber.com/bioamber/en/products#succinic_acid.
- ⁸³ Ministry of Research, Innovation and Science. *Ontario Investing \$3 Million for Biotechnology Hub in Sarnia: Province Supporting Growing Cluster to Create Jobs, Increase Competitiveness*. <https://news.ontario.ca/mris/en/2016/06/ontario-investing-3-million-for-biotechnology-hub-in-sarnia.html>.
- ⁸⁴ Sarnia-Lambton Economic Partnership. 2016. *Government of Canada Invests \$12M to Support Bio-Based Innovation in Sarnia*. <http://www.>



sarnialambton.on.ca/government-canada-invests-12m-support-bio-based-innovation-sarnia/.

⁸⁵ Sarnia-Lambton Economic Partnership. 2016. *Location*. <http://www.sarnialambton.on.ca/location/>.

⁸⁶ CRIBE. 2016. *Strategic Pillars*. <http://www.cribe.ca/strategic-pillars>.

⁸⁷ Centre for Research and Innovation in the Bio-Economy. 2014. *CRIBE Invests up to \$1.5 Million in Ensyns` Innovative Biofuels Plant*. <http://www.cribe.ca/news/content/media-releases/article/cribe-invests-up-to-15-million-in-ensyns-innovative-biofuels-plant>.

⁸⁸ Thunder Bay Port Authority. 2016. *Port of Thunder Bay Economic Impact*. <http://www.portofthunderbay.com/article/port-of-thunder-bay-economic-impact-270.asp>.

⁸⁹ University of Guelph, 2016. *Innovation and Partnerships*. http://www.uoguelph.ca/omafra_partnership/research/en/innovationpartnerships/InnovationAndPartnerships.asp

⁹⁰ City of Guelph Economic Development Services. 2014. http://guelph.ca/wp-content/uploads/Agri_Food_Value_Prop_Final.pdf. Page 2.

⁹¹ City of Guelph Economic Development Services. 2014 http://guelph.ca/wp-content/uploads/Agri_Food_Value_Prop_Final.pdf. Page 27.